

Research Intern Discussion Paper

Development Cost Trends in Multifamily Housing

August 2013

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This discussion paper was written by a graduate student working as a summer research intern with Minnesota Housing. While the paper was written under the supervision of Minnesota Housing staff, it is an independent research project and does not necessarily reflect the views and policies of Minnesota Housing.

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Executive Summary

Cost containment has been a topic of considerable discussion recently in the field of affordable housing. In times of shrinking public budgets and increasing demand for high-quality affordable housing,¹ cost containment is vital for the continued provision of publicly assisted housing.² In this regard, it is important that the efficacy of past efforts at cost containment be analyzed and the findings be used to inform future policies and practices.

At the Minnesota Housing Finance Agency (Minnesota Housing), recent efforts at cost containment have mainly come from implementation of the predictive cost model.³ This tool measures the “cost reasonableness” of proposed developments. It is a regression analysis that models total development costs (TDC) using cost data from past projects developed with Minnesota Housing financing. Proposed projects with costs more than 25% above the model receive additional scrutiny.

This discussion paper analyzes cost trends for projects that received financing from Minnesota Housing. Though it is not possible through this research to attribute causality to past efforts at cost containment for any reductions in costs, this research attempts to find out whether an increased emphasis on cost containment over the last decade has coincided with reductions in development costs. This research began with a literature review of relevant and best practices to guide the scope of the research. In addition, data on developments financed by Minnesota Housing were analyzed to measure the direction and magnitude of changes in costs.

The findings of these analyses point to the conclusion that Minnesota Housing has contained costs over the past decade. Once inflation and differences in project size and scope have been accounted for, average TDC has remained relatively flat. When projects are separated by primary project differences (i.e. new construction vs. rehabilitation, Low Income Housing Tax Credit (LIHTC) projects vs. those without, projects that include acquisition vs. those without, and projects within the Twin Cities Metro vs. those in Greater Minnesota) cost trends appear to be declining overall. While this finding is good news, it must be noted that due to limited sample sizes in some of the analyses, these conclusions cannot be taken as definitive. The validity of these finding is reinforced by similar conclusions reached by other state’s housing finance agencies and other research performed by Minnesota Housing. The result of a flat TDC trend is

especially noteworthy due to the fact that within the past decade Minnesota Housing has implemented policies mandating additional requirements or giving preference to developments that would be expected to have higher costs (e.g. green standards, supportive housing, etc.).

Introduction

Governmental agencies are aware of public perceptions that government spending can be wasteful. This is especially true of the agencies working with the financing of affordable housing for people of low or moderate income. Like other programs with the purpose of improving the welfare of the vulnerable within society, funding for affordable housing is limited and can be heavily scrutinized. It is necessary to maximize the production of affordable housing with the funds available by containing costs and reducing funding per-unit. This is a challenge when the units need to be long-lasting and high quality.

This research began with the desire to understand whether Minnesota Housing has had any success containing costs through efforts implemented over the past decade. Specifically, has TDC been on the rise, and if so, what are the drivers? The answer to this question is not straightforward. TDC needs to be broken down into great detail in order to locate the drivers of change because there are a large variety of costs which must be accounted for. Given the many differences across projects in both size and scope, it is also necessary to isolate and analyze the varied project types.

The analyses in this report will address these specific research questions:

- 1) Has TDC been increasing over the past decade?
- 2) How is TDC spread across acquisition, construction, and soft costs? ⁴
- 3) Which cost categories have seen increases? Which categories have seen decreases?
- 4) Are high costs and/or large increases associated with certain types of projects or locations?
- 5) How does TDC change from initial application to loan closing? Are the changes specific to certain types of projects, locations, developers, contractors, or architects?
- 6) How do Minnesota Housing's costs and trends compare with other housing finance agencies?
- 7) What strategies have other housing agencies used to effectively contain costs?
- 8) What possible policy or program changes could be implemented to contain costs in Minnesota?

Literature Review *(more extensive review in Appendix A)*

This research began by examining the conclusions of other research on cost containment. Unfortunately, there has been very little work done in this area in the recent past. Extensive searches were performed, using several different approaches, which located 9 reports with subject matter similar to the proposed focus of this project. Of the relevant studies, many of them were undertaken more than 15 years ago.

The main findings are:

- 1) Affordable housing can be more expensive to produce than market-rate housing due to the more complex financing packages and the influences of location, which raise acquisition costs.
- 2) Keeping TDC contained generally means keeping them in line with market-rate development costs within the same geographical area.
- 3) Comparisons among affordable housing projects, and between affordable housing and market-rate projects, are often problematic due to differences in projects which are often overlooked; such as unit sizes or location. To achieve the most appropriate comparisons it is important to account for these differences.
- 4) Although TDC per-unit for affordable housing is often higher than market rate, construction costs are usually comparable to market-rate units developed in the same geographical area. This finding is not supported by Minnesota Housing's predictive cost model. Through this tool, the Agency has found that costs from past developments have been about 12% higher than RSMeans construction cost estimates for comparable projects in the same geographical area.
- 5) Comparisons made using basic per-unit costs provide for inaccurate analyses due to the problem of differing unit size and numbers of bedrooms. To provide more accurate comparisons, a better measure should account for number of people housed (rather than square footage or number of units). This type of measurement has found that affordable housing projects are more competitive with market-rate projects in cost terms.

Data and Methodology

The data used for the following analyses came from 581 Minnesota Housing financed projects from the time span between January 1, 2003 and December 31, 2012. The data source was Minnesota Housing's form 402, the agency's application for project financing. The data was drawn from each project's loan closing. The form requires that the applicant outline the size and scope of the project and state all expected development costs broken down into various categories. The cost breakout includes: TDC, acquisition costs, new construction costs, rehabilitation costs, environmental costs, developer fees, financing costs, professional fees, syndication fees, non-mortgageable costs, and missing costs. All costs reported in the findings are inflation-adjusted using a combination of the Producer Price Indices for Residential Construction and Residential Maintenance and Repair and the Employment Cost Index. The costs are provided on a per-unit basis unless otherwise noted. The applicant provides the information and data and may include reporting errors.

The sample was filtered to remove projects with obvious coding errors and projects that did not include any construction costs. This process reduced the sample size to 412 projects. Next, a cost adjustment methodology⁵ was applied to the sample in order to account for differences in unit sizes among projects. Projects were classified by whether they consisted of units primarily for "Singles," "Families/Mixed," or "Large Families." "Singles" are defined as projects where the share of efficiencies and 1 bedroom units is 75% or greater. "Large Families" are defined as projects where the share of units with 3 or more bedrooms is 50% or greater. "Families/Mixed" applies to all the remaining projects. These classifications were then separated by whether they were new construction or rehabilitation projects. At this point a "cost adjustment" was made using factors that serve to increase the costs of "Singles" projects and to decrease the costs of "Large Families" projects. The adjustments try to make development costs equivalent to "Families/Mixed" projects. "Singles" projects generally cost less; thus their costs were increased. "Large Families" projects generally cost more than "Families/Mixed" projects; thus their costs were reduced. The adjustment factors used were 1.17 for new construction "Singles" projects (increasing costs by 17%), 1.30 for rehabilitation "Singles" projects (increasing costs by 30%), 0.96 for new construction "Large Families" projects (decreasing costs by 4%), and 0.85 for rehabilitation "Large Families" projects (decreasing costs by 15%). These factors were devised by looking at historical differences between these types of projects.

An important note about the use of this adjustment is that it has an unfortunate side-effect. While use of the cost containment methodology can provide for better cost comparisons of individual projects, its use can lead to inflated overall costs above what they actually are because Minnesota Housing has financed more “Singles” projects (which have their cost increased) than “Large Families” projects (which have their costs decreased). When calculating average TDC per-unit for the entire sample, the adjusted costs are 3.3% higher than the unadjusted costs.

Once the cost adjustments were made, analyses were performed by sorting the sample into mutually exclusive classifications in order to estimate the cost effects of the different project types. Project types are: new construction projects versus rehabilitation projects, projects using Low Income Housing Tax Credits versus those without, projects which included acquisition costs versus those that did not, and projects located in the Twin Cities Metro area versus those which were located in Greater Minnesota. Project groupings were also separated by year to measure the differences in costs over the decade.

Broad Analysis

For the following findings, each sample for each year contained at least 10 projects unless otherwise noted. Though these sample sizes are considered small for statistical analysis, they represent all the projects with data that were available through Minnesota Housing. These findings cannot claim to possess statistical significance; yet, they do provide a picture of the cost trends for projects financed by Minnesota Housing.

TDC Shares

For the entire sample of 412 projects, acquisition costs accounted for an average of 15% of TDC, construction costs accounted for an average of 65%, and soft costs accounted for the remaining 20% (Table 1). Acquisition costs account for a particularly large share of TDC for rehabilitation projects. Soft costs account for a large share of TDC for projects using the Low Income Housing Tax Credit.

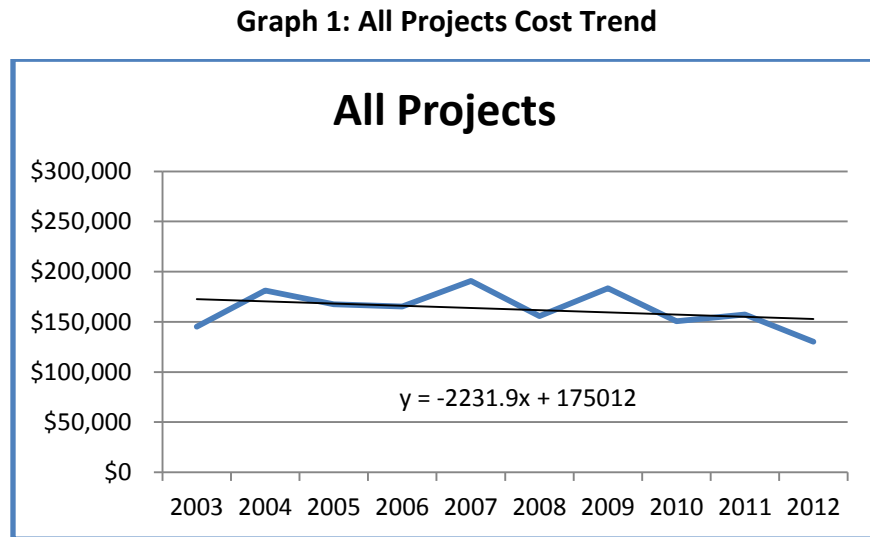
Table 1: Cost Shares by Project Type

Project Type	Sample Size	Average TDC Per-unit	Average Share of TDC		
			Acquisition	Construction	Soft
ALL	412	\$161,791	15.35%	65.03%	19.61%
NEW CON	203	\$211,880	6.63%	71.85%	21.52%
REHAB	209	\$113,140	23.83%	58.41%	17.76%
LIHTC	216	\$205,810	15.71%	60.89%	23.40%
NON-LIHTC	196	\$113,280	14.96%	69.60%	15.44%
ACQ	302	\$186,825	20.95%	58.29%	20.77%
NON-ACQ	110	\$93,062	0.00%	83.55%	16.45%
METRO	233	\$172,316	16.92%	62.99%	20.09%
GR. MN.	179	\$148,091	13.31%	67.69%	19.00%

(See note 4 for explanation of cost groups)

Cost Trends

For the entire sample, adjusted per-unit costs appear to have decreased (**Graph 1**). The trend line starts at \$175,012 in 2002 and declines by \$2,232 each year, suggesting a downward trend.

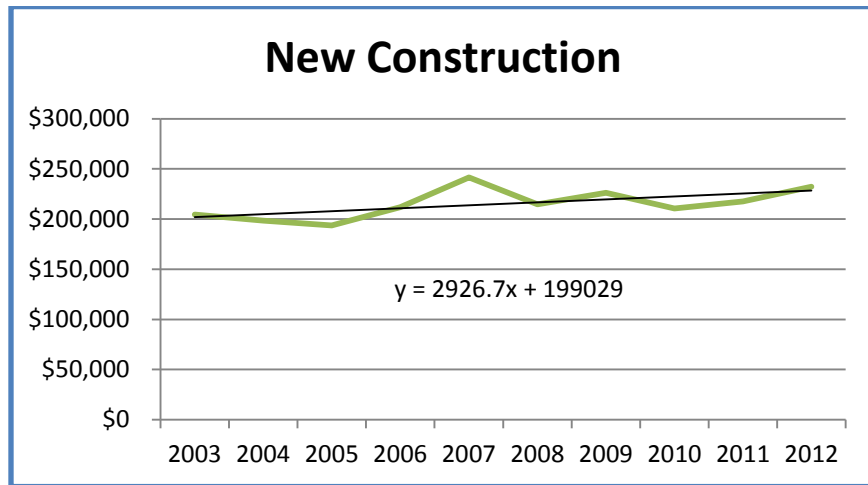


(Adjusted average TDC per-unit by year with trend line and equation)

When comparing the project types of new construction and rehabilitation, the former are much more expensive to produce than the latter. The average per-unit cost for all years is \$211,880 for new construction and \$113,140 for rehabilitation (**See Table 1 above**).

For new construction projects, adjusted per-unit costs appear to have increased (**Graph 2**). The trend line starts at \$199,029 in 2002 and increases by \$2,927 each year, suggesting an upward trend.

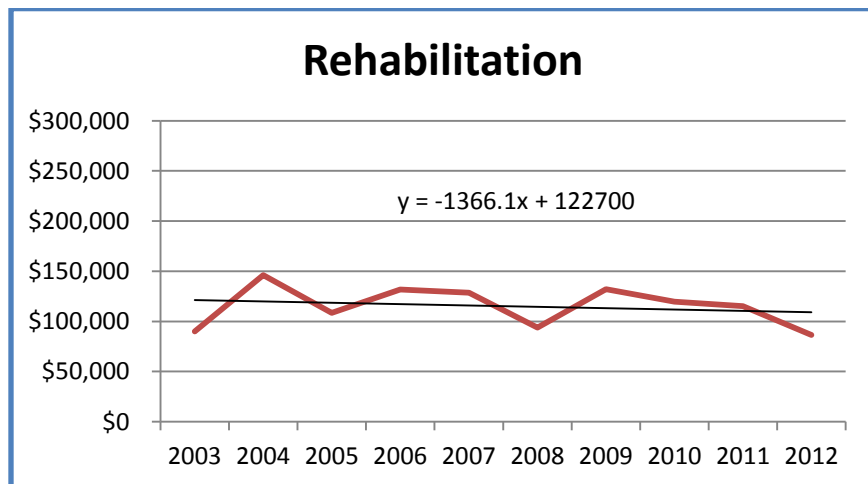
Graph 2: New Construction Projects Cost Trend



(Adjusted average TDC per-unit by year with trend line and equation - 2012 had only 9 projects)

For rehabilitation projects, adjusted per-unit costs appear to have decreased (**Graph 3**). The trend line starts at \$122,700 in 2002 and declines by \$1,366 each year, suggesting a downward trend.

Graph 3: Rehabilitation Projects Cost Trend

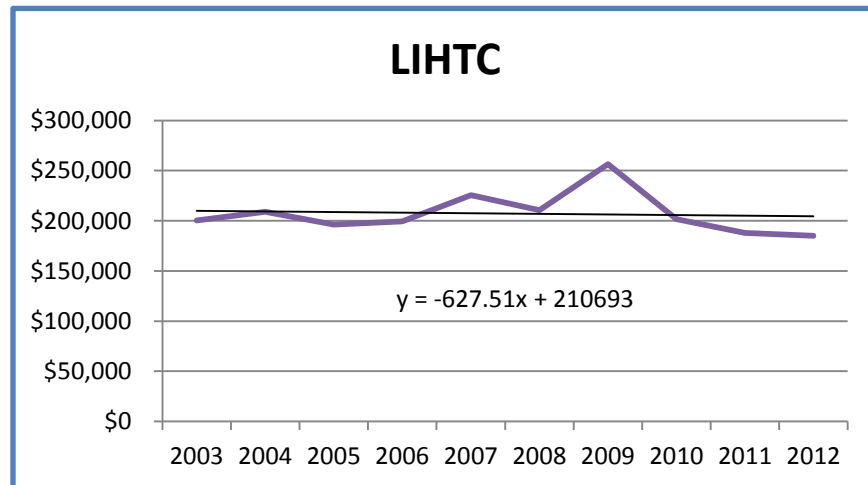


(Adjusted average TDC per-unit by year with trend line and equation)

When comparing LIHTC and Non-LIHTC projects, the former are more expensive to produce than the latter (See Table 1 above). The average per-unit cost for all years is \$205,810 for LIHTC projects and \$113,280 for Non-LIHTC projects.

For the sample of LIHTC projects, adjusted per-unit costs appear to have decreased very slightly (Graph 4). The trend line starts at \$210,693 in 2002 and declines by \$628 each year, suggesting essentially a flat trend.

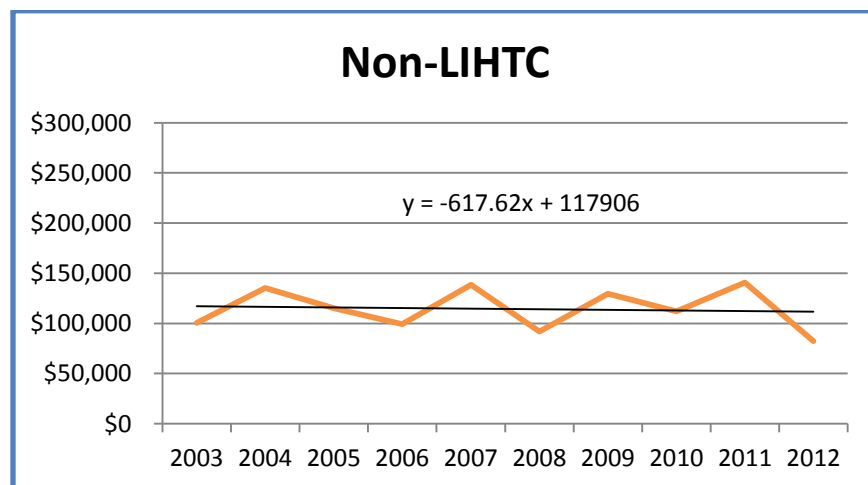
Graph 4: Low Income Housing Tax Credit Projects Cost Trend



(Adjusted average TDC per-unit by year with trend line and equation)

For the sample of Non-LIHTC projects, adjusted per-unit costs appear to have decreased very slightly (Graph 5). The trend line starts at \$117,906 in 2002 and declines by \$618 each year, suggesting essentially a flat trend.

Graph 5: Non-Low Income Housing Tax Credit Projects Cost Trend

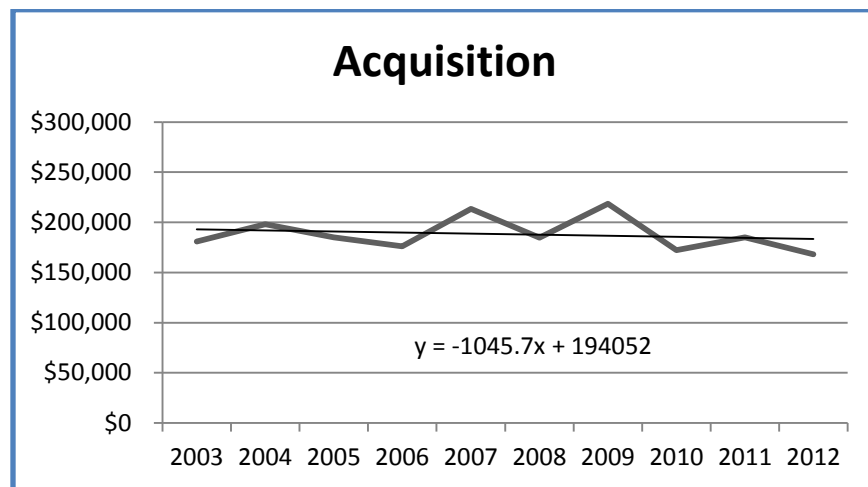


(Adjusted average TDC per-unit by year with trend line and equation)

A comparison between acquisition and non-acquisition projects is provided, though it is problematic due to sample size issues of the non-acquisition projects. Some years only include 7 to 9 projects. When comparing these project types, the acquisition projects are more expensive to produce than the non-acquisition projects (See Table 1 above). The average per-unit cost for all years is \$186,825 for acquisition projects and \$93,062 for non-acquisition projects.

For the sample of acquisition projects, adjusted per-unit costs appear to have decreased (Graph 6). The trend line starts at \$194,052 in 2002 and declines by \$1,046 each year, suggesting a downward trend.

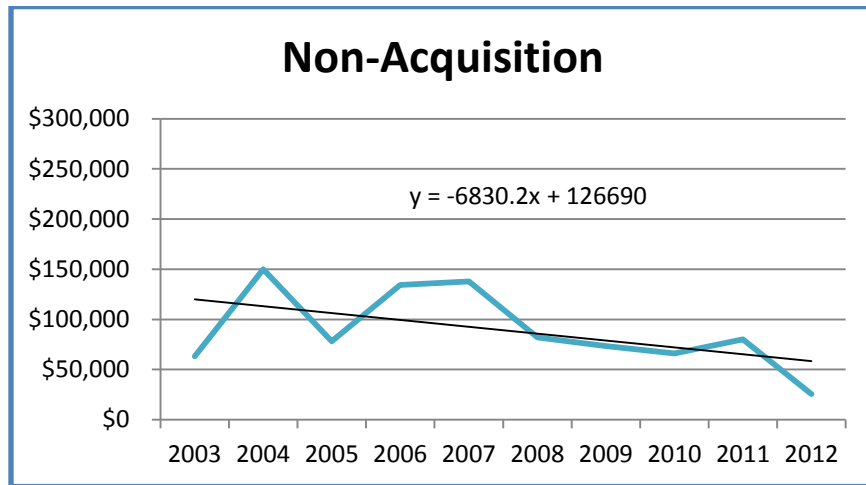
Graph 6: Acquisition Projects Cost Trend



(Adjusted average TDC per-unit by year with trend line and equation)

For the sample of non-acquisition projects, adjusted per-unit costs appear to have decreased (Graph 7). The trend line starts at \$126,690 in 2002 and declines by \$6,830 each year, suggesting a downward trend.

Graph 7: Non-Acquisition Projects Cost Trend

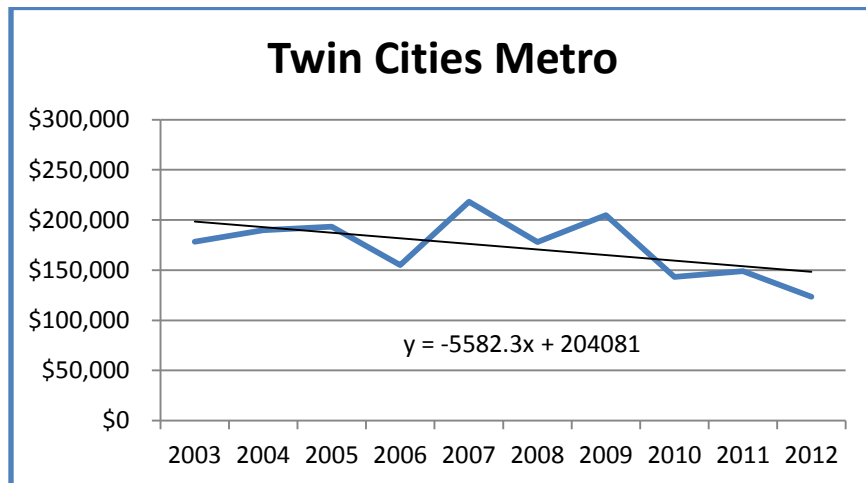


(Adjusted average TDC per-unit by year with trend line and equation – 2005 had only 7 projects – 2009 had only 8 projects – 2010 had only 9 projects – 2011 had only 9 projects – 2012 had only 8 projects)

When comparing Metro and Greater Minnesota projects, the former are more expensive to produce than the latter (See Table 1 above). The average per-unit cost for all years is \$172,316 for Metro projects and \$148,091 for Greater Minnesota projects.

For the sample of Metro projects, adjusted per-unit costs appear to have decreased (Graph 8). The trend line starts at \$204,081 in 2002 and declines by \$5,582 each year, suggesting a downward trend.

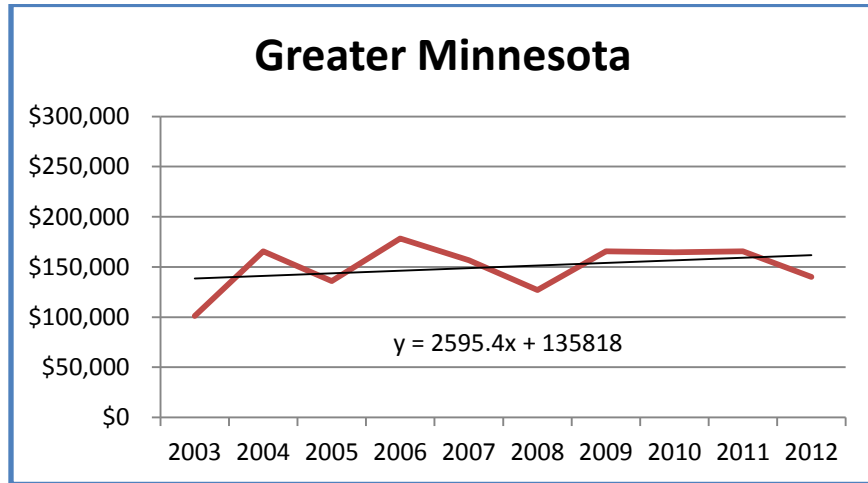
Graph 8: Twin Cities Metro Projects Cost Trend



(Adjusted average TDC per-unit by year with trend line and equation)

For the sample of Greater Minnesota projects, adjusted per-unit costs appear to have increased (Graph 9). The trend line starts at \$135,818 in 2002 and increases by \$2,595 each year, suggesting an upward trend.

Graph 9: Greater Minnesota Projects Cost Trend



(Adjusted average TDC per-unit by year with trend line and equation)

Overview of Cost Trends

Table 2 below shows per-unit cost changes between 2003 and 2012 broken out by cost categories (columns) for each type of project (rows). The top figure in each cell is the change in dollar terms, while the bottom figure is the change in percentage terms. TDC (in the first column) is the summation of the changes within all cost categories to the right. Acquisition (ACQ) costs are total acquisition costs for the project type. New construction (NC) costs, rehabilitation (REHAB) costs, and environmental (ENV) costs make up total construction costs. Developer (DEV) fees, financing (FIN) costs, professional (PRO) fees, syndication (SYN) fees, non-mortgageable (NON) costs, and missing (MIS) costs make up total soft costs.

Table 2: Per-unit Cost Changes by Project Type and Cost Category

			ACQ	CONSTRUCTION				SOFT				
		TDC	ACQ costs	NC costs	REHAB costs	ENV costs	DEV fees	FIN costs	PRO fees	SYN fees	NON costs	MIS costs
ALL	DIFF	(\$15,002)	\$4,589	(\$26,707)	\$5,792	\$273	\$700	\$262	(\$675)	\$14	\$750	\$0
	%	-10.33%	23.35%	37.18%	22.82%	91.29%	6.35%	5.64%	-7.16%	3.75%	28.71%	0.00%
NEW CON	DIFF	\$27,565	\$3,685	\$3,281	NA	\$31	\$4,134	\$3,691	\$2,608	\$383	\$2,912	\$0
	%	13.47%	24.62%	2.23%	NA	19.59%	24.50%	55.35%	18.62%	64.26%	71.31%	0.00%
REHAB	DIFF	(\$3,434)	\$2,623	NA	(\$7,360)	\$307	\$2,165	(\$188)	\$219	(\$33)	\$563	\$0
	%	-3.82%	10.93%	NA	-15.04%	71.35%	38.78%	-6.84%	4.23%	-19.47%	45.31%	0.00%
LIHTC	DIFF	(\$15,370)	\$12,257	(\$36,377)	\$7,474	\$93	\$1,172	\$1,186	(\$1,846)	(\$6)	\$676	\$0
	%	-7.67%	53.74%	-32.81%	35.28%	22.82%	6.47%	15.10%	-13.50%	-0.75%	14.32%	0.00%
NON LIHTC	DIFF	(\$18,465)	(\$2,338)	(\$20,923)	\$4,608	\$424	(\$197)	(\$768)	\$59	\$0	\$670	\$0
	%	-18.34%	-13.67%	-51.88%	16.02%	199.83%	-3.71%	-37.53%	0.98%	0.00%	73.59%	0.00%
ACQ	DIFF	(\$12,692)	\$4,837	(\$29,515)	\$9,628	(\$17)	\$1,234	\$978	(\$1,011)	(\$8)	\$1,180	\$0
	%	-7.02%	17.14%	-32.42%	37.88%	-4.08%	8.42%	17.52%	-8.68%	-1.47%	34.66%	0.00%
NON ACQ	DIFF	(\$39,474)	NA	(\$33,324)	(\$377)	\$374	(\$3,002)	(\$2,678)	(\$1,770)	(\$79)	\$1,422	(\$39)
	%	-40.27%	NA	-63.49%	-1.37%	199.85%	-49.20%	-77.03%	-25.53%	-73.56%	124.28%	-100.00%
METRO	DIFF	(\$54,666)	(\$4,644)	(\$59,120)	\$18,133	\$305	(\$3,685)	(\$1,389)	(\$3,540)	(\$378)	(\$348)	\$0
	%	-30.66%	-16.77%	-60.84%	99.00%	102.10%	-28.10%	-25.22%	-29.63%	-64.47%	-9.46%	0.00%
GR. MN	DIFF	\$38,981	\$17,096	\$17,688	(\$11,542)	\$226	\$6,931	\$2,593	\$3,203	\$567	\$2,219	\$0
	%	38.55%	191.64%	46.52%	-33.16%	75.20%	84.12%	74.57%	52.80%	619.31%	187.36%	0.00%

(Dollar and percentage changes from 2003 to 2012 – Analysis for NO ACQ project type (highlighted in blue) used 2003-05 and 2010-12 clustered years due to small sample sizes in individual years)

As displayed in the graphs and in the first data column of Table 2, overall TDC declined for 6 of the 8 project types. For the two project types which showed increasing TDC per-unit, the drivers appear to be multiple. New construction project type costs increased in every cost category. Greater Minnesota project type costs increased in every cost category except rehabilitation costs. There is an interesting anomaly in the data. New construction costs for new construction projects went up (\$3,281 per unit or 2.23%); however, new construction costs for the other project types went down (except one). This highlights an interesting trend from 2003 to 2012. The number of new construction projects went down. Thus, for the other project types (LIHTC,

non-LIHTC, acquisition, non-acquisition, Metro, and Greater Minnesota) there were fewer new construction costs with fewer new construction projects in 2012.

Two cost categories displayed increasing costs. These were environmental costs and non-mortgageable costs. Each of these cost categories only had one project type in which per-unit costs decreased over the decade. In the case of environmental costs, the small magnitude of the change in dollars had little effect on TDC per-unit even though the percent increases in costs were all greater than 20%. Non-mortgageable costs rose with greater magnitude, but also in amounts too small to affect an overall change in TDC. The cost category of acquisition also seemed to show an overall increasing trend. Only Metro projects and those not utilizing LIHTC saw a decrease in acquisition costs. The results for the rest of the cost categories are mixed. There appears to be no obvious sustained trends in costs across all project types.

As noted, an important point in regards to these findings is that the mix of projects that make up each project type sample can change over time and affect the trends. For instance, when examining cost trends for Metro and Greater Minnesota, changing proportions of new construction to rehabilitation projects between 2003 and 2012 could affect the trends and mask changes in the underlying costs. An increasing share of rehabilitation projects (lower costs) over the decade would lead to lower TDC per-unit even if the underlying costs were not increasing. For this reason, an additional analysis was performed and detailed below (Page 19).

Cost Changes from Initial Application to Loan Closing

The above analyses used cost data at the point of loan closing. These numbers can change from those used at the initial application when Minnesota Housing selects projects for funding. In order to measure these changes, loan closing cost data and application cost data were compared. Good application and loan closing cost data was available for 362 projects.

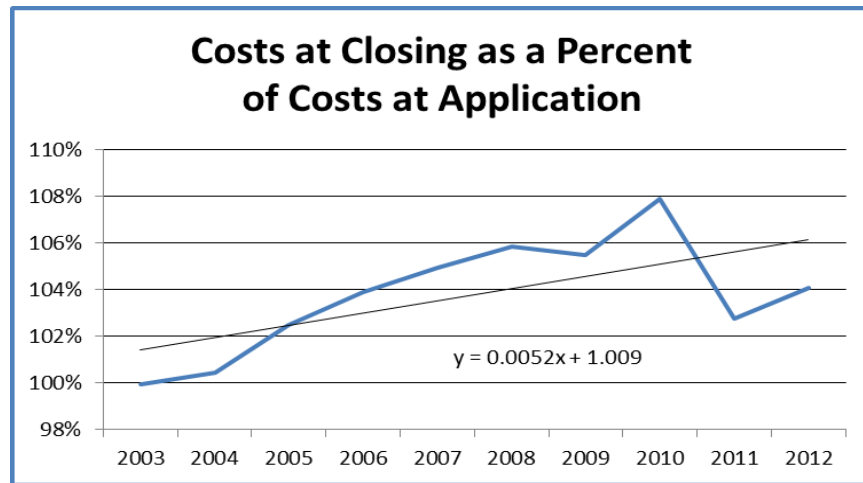
For the sample, costs increased by roughly 4% between initial application and loan closing. As seen in Table 3 below, this figure differs slightly by project type. Projects that did not use Low Income Housing Tax Credits were the only type that saw a decrease in costs between application and loan closing.

Table 3: Ratio of TDC at Loan Closing to TDC at Application

Project Type	TDC at Loan Closing as a Percentage of TDC at Application
ALL	103.93%
New Construction	102.85%
Rehabilitation	105.60%
LIHTC	105.30%
Non-LIHTC	98.91%
Acquisition	104.15%
Non-Acquisition	102.02%
Metro	103.99%
Greater Minnesota	103.78%

The differences in costs at application and at loan closing appear to be increasing over time (Graph 10). The trend line starts at 100.9% in 2002 and increases by approximately half a percentage point each year. This signifies that, on average, developers are becoming increasingly worse at estimating project costs at initial application.

Graph 10: Change in TDC from Application to Loan Closing by Year



(Difference in TDC from initial application to loan closing by year with trend line)

To analyze changes in projected costs by developer, contractor, and architect, the sample was sorted by each group. Only partners that were involved in 4 or more projects were investigated further. None of the partners investigated had average increases above 9.01% or decreases below 8.5%. Partners with large increases in costs had an average loan-closing/application ratio above 105%, and partners with decreases in costs had an average loan-closing/application ratio below 100%. Partners with large ranges of cost differences were also identified.

Of the 24 developers assessed:

- 4 were identified as having decreases (averages of 91.50% to 99.79%)
- 4 were identified as having large increases (averages of 106.34% to 107.75%)
- 1 had a large range among its projects (81% to 128% - average of 103.21%).

Of the 16 contractors assessed:

- 0 were identified as having decreases
- 5 were identified as having large increases (averages of 105.67% to 109.01%)
- 2 had large ranges among its projects (66.01% to 125% - average 103.77%, and 87% to 129% - average of 109.01%)

Of the 20 architects assessed:

- 1 was identified as having decreases (average of 98.95%)
- 4 were identified as having large increases (averages of 105.05% to 107.01%)
- 1 had a large range among its projects (74% to 132% - average of 104.69%)

Refined Analysis (See Appendix C)

As discussed in the broader trend analyses in the previous section, project mix (e.g. share of new construction versus rehabilitation) can influence the trend, rather than just cost changes. To achieve a more detailed analysis, the complete sample of 412 was sorted by all of the project types simultaneously. This produced 16 project combinations. Because the sample lacked an adequate number of non-acquisition projects, the 8 project combinations that included non-acquisition were dropped from the analysis. This left 8 project combinations and a reduction of the sample size to 284 projects (Table 4). With the detailed split, the mix of new construction versus rehabilitation will not affect the trend analysis because there are 4 new construction categories and 4 rehabilitation categories. They are not all rolled together.

Table 4: Refined Analysis Project Types

Classifications for Refined Analysis				
1.	ACQ	NEW CON	LIHTC	METRO
2.	ACQ	NEW CON	NON LIHTC	METRO
3.	ACQ	NEW CON	LIHTC	GR. MN
4.	ACQ	NEW CON	NON LIHTC	GR. MN
5.	ACQ	REHAB	LIHTC	METRO
6.	ACQ	REHAB	NON LIHTC	METRO
7.	ACQ	REHAB	LIHTC	GR. MN
8.	ACQ	REHAB	NON LIHTC	GR. MN

To increase the sample sizes of each project combination, projects were clustered by groups of multiple years: 2003-05, 2006-09, and 2010-12. Even with the use of clustered years, there are some very small sample sizes. Of the 24 clustered groupings (8 project types with 3 time periods each), 9 samples had more than 10 projects, 12 samples had 8 or 9 projects, and 3 samples had 6 or less projects. Given these very small sample sizes, the following analysis should be viewed as illustrative rather than conclusive.

TDC Shares

With the sample sorted by all project types simultaneously it is possible to see the influence that individual project types have on the average cost shares (Table 5). Acquisition costs account for a much smaller share of TDC for new construction projects than for rehabilitation, while the opposite is true of construction costs' share of TDC. Soft costs make up a large share of TDC for LIHTC projects.

Table 5: Refined Analysis Cost Shares by Project Type

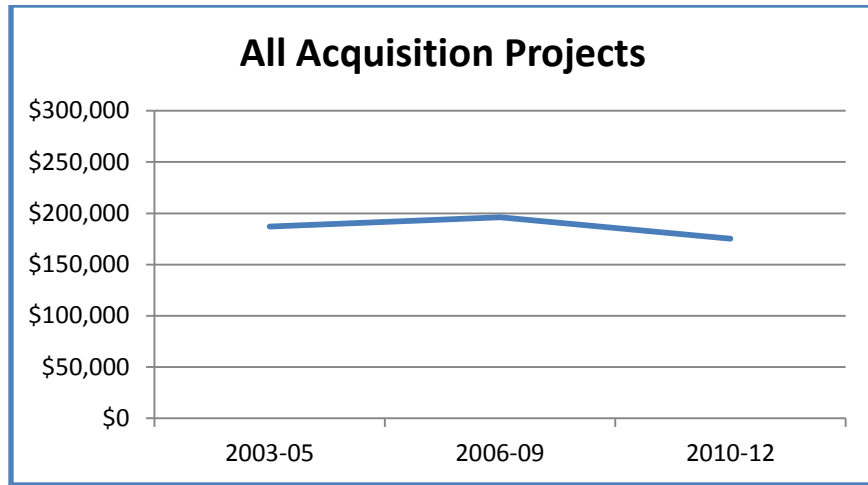
Project Type				Sample Size	Average TDC Per-unit	Average Share of TDC		
						Acquisition	Construction	Soft
ALL				412	\$161,791	15.35%	65.03%	19.61%
ALL ACQ PROJECTS				284	\$186,825	20.95%	58.29%	20.77%
ACQ	NEW CON	LIHTC	METRO	70	\$237,308	8.24%	67.45%	24.31%
ACQ	NEW CON	NON LIHTC	METRO	18	\$202,842	10.16%	72.06%	17.78%
ACQ	NEW CON	LIHTC	GR. MN	45	\$186,321	4.99%	71.84%	23.17%
ACQ	NEW CON	NON LIHTC	GR. MN	25	\$183,501	6.58%	76.59%	16.83%
ACQ	REHAB	LIHTC	METRO	37	\$197,399	35.11%	41.15%	23.74%
ACQ	REHAB	NON LIHTC	METRO	39	\$123,891	41.43%	43.32%	15.26%
ACQ	REHAB	LIHTC	GR. MN	29	\$149,746	35.48%	43.15%	21.37%
ACQ	REHAB	NON LIHTC	GR. MN	21	\$117,403	42.37%	42.73%	14.89%

(See note 4 for explanation of cost groups)

Cost Trends

For the entire sample of acquisition projects, adjusted per-unit costs appear to have decreased (Graph 11). The difference between the 2003-05 average of \$186,933 and the 2010-12 average of \$175,110 is \$11,823.

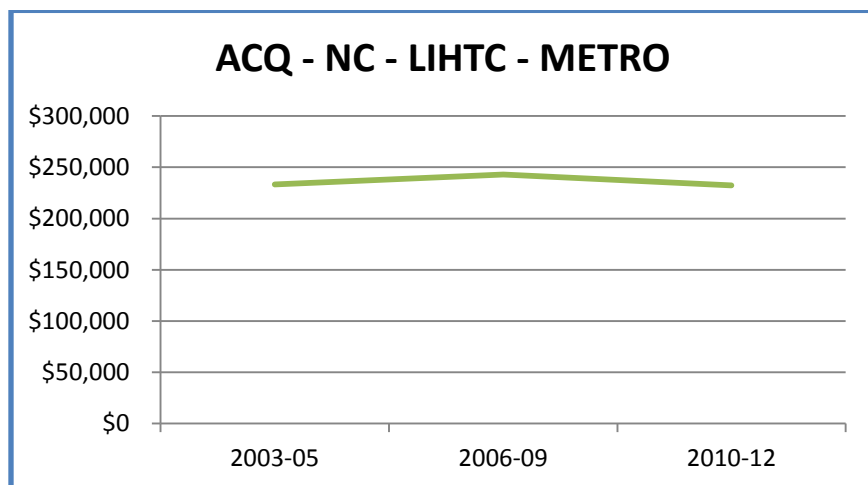
Graph 11: Acquisition Projects Cost Trend



(Adjusted average TDC per-unit by clustered years)

For the sample of acquisition/new construction/LIHTC/Metro projects, adjusted per-unit costs appear to have remained flat (Graph 12). The difference between the 2003-05 average of \$233,136 and the 2010-12 average of \$232,286 is just \$850.

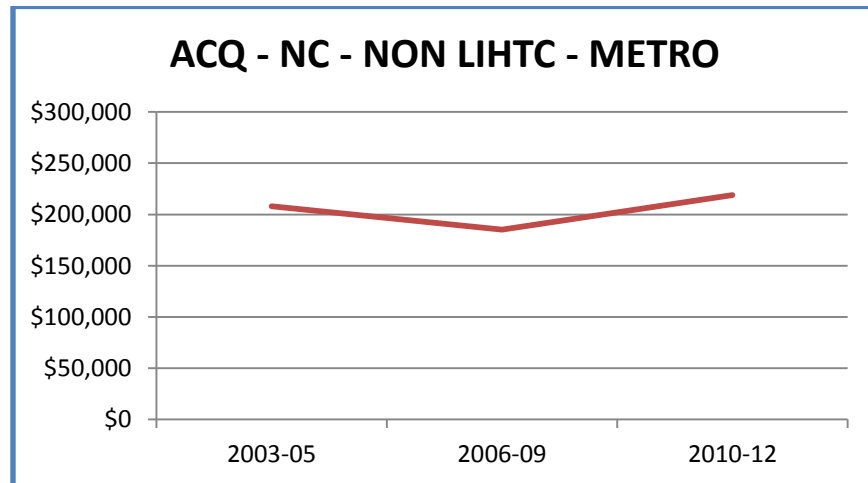
Graph 12: Acquisition/New Construction/LIHTC/Metro Projects Cost Trend



(Adjusted average TDC per-unit by clustered years)

For the sample of acquisition/new construction/non-LIHTC/Metro projects, adjusted per-unit costs appear to have increased (**Graph 13**). The difference between the 2003-05 average of \$208,039 and the 2010-12 average of \$218,780 is \$10,741.

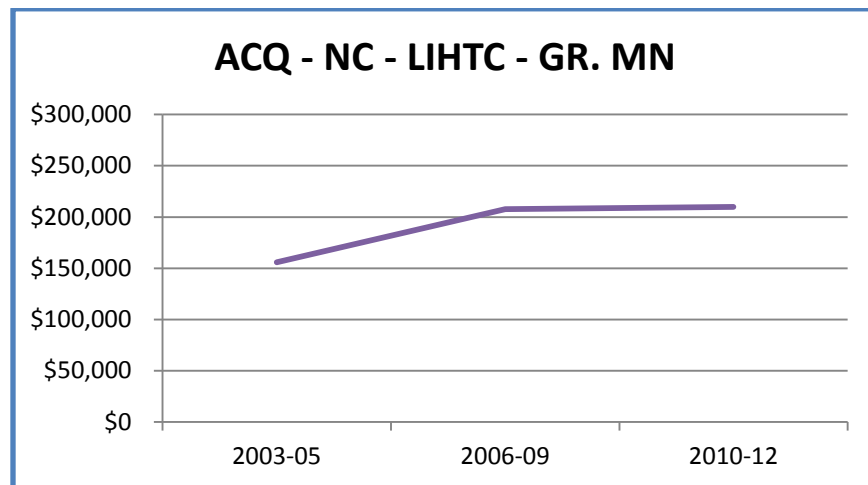
Graph 13: Acquisition/New Construction/No LIHTC/Metro Projects Cost Trend



(Adjusted average TDC per-unit by clustered years)

For the sample of acquisition/new construction/LIHTC/Greater Minnesota projects, adjusted per-unit costs appear to have increased (**Graph 14**). The difference between the 2003-05 average of \$155,977 and the 2010-12 average of \$210,007 is \$54,030.

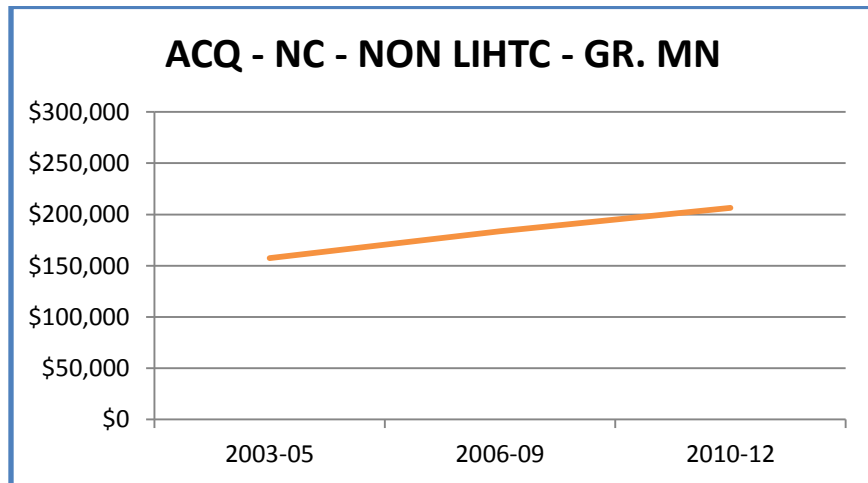
Graph 14: Acquisition/New Construction/LIHTC/Greater MN Projects Cost Trend



(Adjusted average TDC per-unit by clustered years)

For the sample of acquisition/new construction/non-LIHTC/Greater Minnesota projects, adjusted per-unit costs appear to have increased (Graph 15). The difference between the 2003-05 average of \$157,430 and the 2010-12 average of \$206,563 is \$49,133.

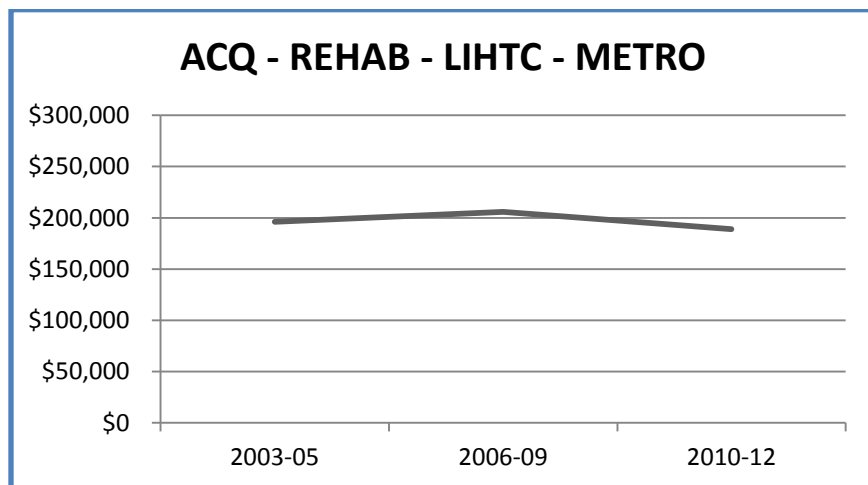
Graph 15: Acquisition/New Construction/No LIHTC/Greater MN Projects Cost Trend



(Adjusted average TDC per-unit by clustered years)

For the sample of acquisition/rehabilitation/LIHTC/Metro projects, adjusted per-unit costs appear to have decreased (Graph 16). The difference between the 2003-05 average of \$196,033 and the 2010-12 average of \$189,095 is \$6,938.

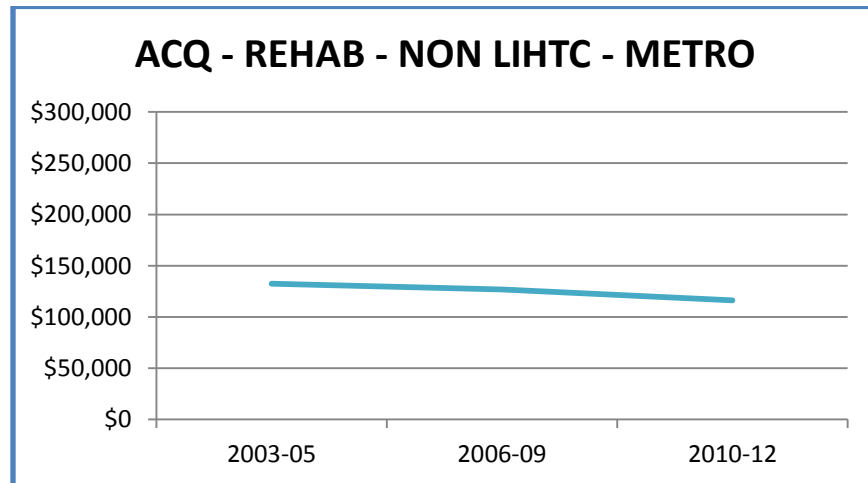
Graph 16: Acquisition/Rehabilitation/LIHTC/Metro Projects Cost Trend



(Adjusted average TDC per-unit by clustered years)

For the sample of acquisition/rehabilitation/non-LIHTC/Metro projects, adjusted per-unit costs appear to have decreased (**Graph 17**). The difference between the 2003-05 average of \$132,480 and the 2010-12 average of \$116,061 is \$16,419.

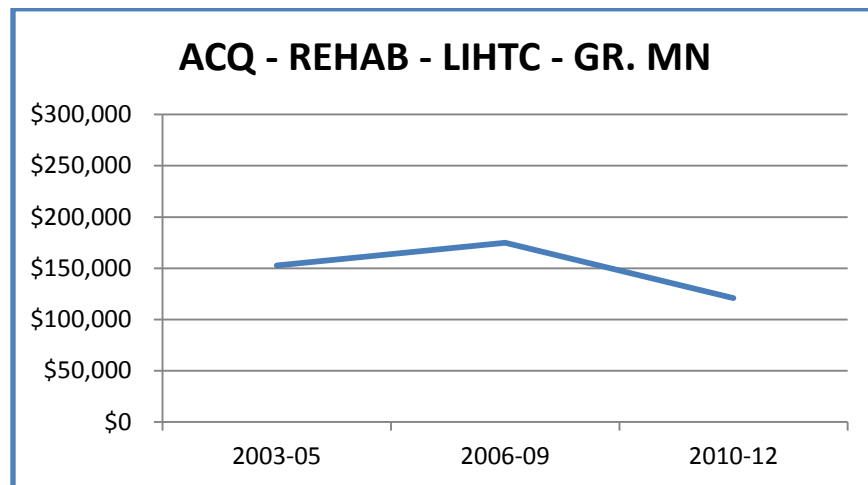
Graph 17: Acquisition/Rehabilitation/No LIHTC/Metro Projects Cost Trend



(Adjusted average TDC per-unit by clustered years)

For the sample of acquisition/rehabilitation/LIHTC/Greater Minnesota projects, adjusted per-unit costs appear to have decreased (**Graph 18**). The difference between the 2003-05 average of \$152,654 and the 2010-12 average of \$120,875 is \$31,779.

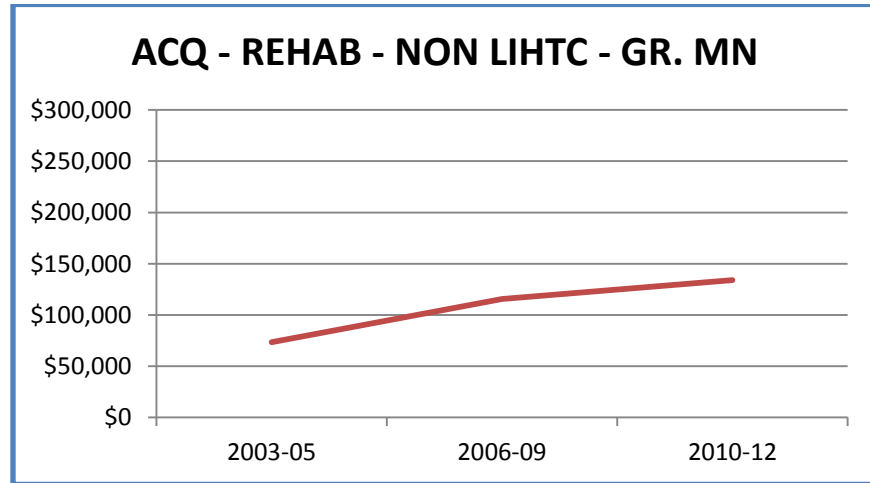
Graph 18: Acquisition/Rehabilitation/LIHTC/Greater MN Projects Cost Trend



(Adjusted average TDC per-unit by clustered years)

For the sample of acquisition/rehabilitation/non-LIHTC/Greater Minnesota projects, adjusted per-unit costs appear to have increased (**Graph 19**). The difference between the 2003-05 average of \$73,411 and the 2010-12 average of \$133,856 is \$60,445.

Graph 19: Acquisition/Rehabilitation/No LIHTC/Greater MN Projects Cost Trend



(Adjusted average TDC per-unit by clustered years)

Overview of Cost Trends

Table 6 shows cost changes broken out by project type and cost category. Across the 8 project types the results are mixed.

- Four project types saw a decrease in TDC per-unit and four project types saw an increase.
- Three of the four increasing project types saw TDC per-unit grow by over 30%.
- None of the decreasing project types saw percentages decline in similar magnitudes.
- With respect to new construction, three of the four project types containing new construction saw increases in TDC per-unit. This was largely the result of increases in the new construction cost category (Shown in the third data column of Table 6).
- Three of the four rehabilitation project types had reductions in TDC per-unit.
- Three of the four project types for the Metro area had reductions in TDC per-unit, while three of the four project types for Greater Minnesota had an increase in TDC per-unit.

These findings mimic the broad trends in these project types from the initial cost analyses earlier in the paper with new construction projects and projects in Greater Minnesota appearing to have increasing TDC.

Table 6: Refined Analysis Per-unit Cost Changes by Project Type and Cost Category

			ACQ	CONSTRUCTION				SOFT					
			TDC	ACQ costs	NC costs	REHAB costs	ENV costs	DEV fees	FIN costs	PRO fees	SYN fees	NON costs	MIS costs
ACQ - NC - LIHTC - METRO	DIFF	(\$850)	\$2,925	(\$11,176)	NA	\$104	\$2,087	\$1,668	(\$431)	(\$693)	\$4,666	\$0	
	%	-0.36%	16.25%	-6.94%		32.38%	10.71%	16.07%	-2.52%	-56.18%	81.52%	0.00%	
ACQ - NC - NON LIHTC - METRO	DIFF	\$10,741	(\$2,999)	\$14,638	NA	\$1,083	\$4,306	(\$3,316)	(\$2,622)	\$0	(\$349)	\$0	
	%	5.16%	-11.17%	10.07%		627.60%	43.85%	-50.04%	-15.97%	0.00%	-12.38%	0.00%	
ACQ - NC - LIHTC - GR. MN	DIFF	\$54,030	\$241	\$33,093	NA	(\$55)	\$4,753	\$3,644	\$8,074	\$590	\$3,689	\$0	
	%	34.64%	2.60%	29.25%		-100.00%	28.41%	65.82%	86.34%	102.60%	278.66%	0.00%	
ACQ - NC - NON LIHTC - GR. MN	DIFF	\$49,133	\$1,594	\$28,333	NA	\$0	\$10,689	\$13	\$5,910	\$0	\$2,595	\$0	
	%	31.21%	20.24%	21.79%		0.00%	194.49%	0.57%	53.50%	0.00%	335.43%	0.00%	
ACQ - REHAB - LIHTC - METRO	DIFF	(\$6,938)	(\$2,577)	NA	(\$3,186)	\$740	\$340	\$182	(\$2,378)	(\$834)	\$775	\$0	
	%	-3.54%	-4.55%		-3.49%	45.14%	1.97%	2.02%	-17.98%	-58.06%	14.20%	0.00%	
ACQ - REHAB - NON LIHTC - METRO	DIFF	(\$16,419)	(\$40,513)	NA	\$16,298	(\$115)	\$2,762	\$48	\$3,642	\$0	\$1,460	\$0	
	%	-12.39%	-54.97%		36.45%	-16.29%	40.54%	2.24%	109.70%	0.00%	135.54%	0.00%	
ACQ - REHAB - LIHTC - GR. MN	DIFF	(\$31,779)	\$23,719	NA	(\$46,446)	(\$593)	(\$1,633)	(\$750)	(\$3,825)	(\$375)	(\$1,876)	\$0	
	%	-20.82%	84.12%		-52.29%	-47.15%	-11.49%	-12.08%	-39.50%	-59.90%	-51.45%	0.00%	
ACQ - REHAB - NON LIHTC - GR. MN	DIFF	\$60,445	\$16,804	NA	\$27,515	\$616	\$7,170	\$1,022	\$6,371	\$0	\$947	\$0	
	%	82.34%	57.32%		86.94%	∞	182.89%	22.42%	170.78%	0.00%	397.06%	0.00%	

(Dollar and percentage changes from 2003-05 to 2010-12 – clustered years)

Two cost categories that showed increasing cost trends are new construction costs and developer fees. Each of these only had one project type in which costs per-unit decreased. In

the case of new construction costs, the large magnitude of the changes had a strong effect on TDC. Developer fees rose with smaller magnitudes, though still experiencing some high percentage increases. The results for the rest of the cost categories are mixed. There appears to be no obvious trends in cost categories across project types.

An important point to note in regards to these findings is that the very small sample sizes found within project types makes the findings far from conclusive. Larger samples would have provided stronger support for the findings; yet, this was not possible as the sample was drawn from the entire Minnesota Housing multifamily portfolio of projects developed in the last decade.

Comparisons

Six other state housing finance agencies were contacted for information on comparable analyses they may have completed, information on recent cost trends, and cost containment practices. These agencies were: Colorado, Iowa, Maryland, Massachusetts, North Carolina, and Washington State. Responses turned up little additional information on cost trends over the past decade. Most agencies did not track the costs of their projects over time in a research oriented capacity. Information offered on cost trends was anecdotal. The overall consensus is that costs have remained relatively flat up until 2012, when costs started to rise. The main reason offered for the recent spike was that there exists an inadequate supply of contractors, which has led to less competition in the industry. This occurred as a result from many contractors being forced to close their businesses during the recent recession and housing collapse. This trend was also noted by staff within Minnesota Housing.

The National Council of State Housing Agencies conducted a survey on cost containment in 2012 (reviewed in Appendix A). The survey did not explicitly ask about the direction or magnitude of cost trends. It did, however, include a question on average costs per-unit for projects awarded Low Income Housing Tax Credits in 2012. The responses provide a benchmark for Minnesota Housing (Table 7). Using the average unadjusted per-unit costs for 2012 only, Minnesota ranks roughly in the middle; just above the median but below the average of the sample. This comparison among states is problematic in that each state has very different conditions under which these developments take place, yet it does show that Minnesota Housing's projects are far from being the most expensive and therefore most controversial.

Table 7: Average LIHTC Project Costs from Survey

2012 Average Costs Per-unit for Tax Credit Properties	
Massachusetts	\$297,418
Illinois	\$253,921
Rhode Island	\$250,000
Pennsylvania	\$245,500
New Hampshire	\$222,348
Maryland	\$215,000
Washington	\$201,000
Maine	\$200,000
Michigan	\$194,000
Colorado	\$187,000
Minnesota	\$178,134
Florida	\$176,796
Delaware	\$176,064
Montana	\$170,363
Idaho	\$169,984
Nevada	\$165,000
Wyoming	\$162,070
Louisiana	\$158,126
Kansas	\$154,047
Ohio	\$150,456
Kentucky	\$133,000
South Dakota	\$131,389
Tennessee	\$119,000

(Results from the National Council of State Housing Agencies survey on 2012 LIHTC average development costs per-unit)

Conclusions

1) Has TDC been increasing over the past decade?

The results of the above analyses point to the conclusion that costs have remained relatively flat over the past decade. While there appear to be trends within certain project types and cost categories, the overall results are mixed. This is the safest conclusion, in the absence of stronger evidence.

2) How is TDC spread across acquisition, construction, and soft costs

Across all project types, construction costs account for the largest share of development costs. Average acquisition costs vary greatly and are dependent upon project type. They take the far smallest share in new construction projects and compete with construction costs for top billing within some rehabilitation project types. Soft costs show the least variance across project types. These costs appear to remain relatively fixed as a proportion of overall development costs, but are higher for LIHTC projects. (See Table 1)

3) Which cost categories have seen increases? Which categories have seen decreases?

There are no cost categories which showed obvious increasing or decreasing trends. Trends which appeared in the broad project type analyses were not replicated by the results of the refined analysis that broke projects into 8 types. (See Table 2 and Table 6) However, the refined analysis suggests that new construction costs have increased.

4) Are high costs and/or large increases associated with certain types of projects or locations?

Average costs are higher for new construction projects, LIHTC projects, acquisition projects, and Metro projects. (See Table 1)

5) How does TDC change from initial application to loan closing? Are the changes specific to certain types of projects, locations, developers, contractors, or architects?

Overall, costs increased by about 4% between initial application and loan closing (See Table 3 and Graph 10). All project types except Non-LIHTC experienced increases on average. There appears to be no locational differences because Metro and Greater Minnesota project types had very similar rates of increase. A small portion of developers, contractors, and architects had higher increases and another small portion had decreases. The average changes by individual partner ranged from 91.50% to 109.01%. More fell into the increasing category than the decreasing.

6) How do Minnesota Housing's costs and trends compare with other housing finance agencies?

Minnesota Housing's costs appear to be middle of the road when compared with other agencies, and the experience of relatively flat costs over the past decade is shared by other agencies. (See Table 7)

7) What strategies have other housing agencies used to effectively contain costs?

The main tool used by other agencies to control costs has been the imposition of a cost cap based on a mixture of past development costs, industry cost guides, and guidelines provided by HUD and the National Council of State Housing Agencies. Unfortunately, the efficacy of this tool has been little researched.

8) What possible policy or program changes could be implemented to contain costs?

Based upon the findings of this research and a sampling of cost containment tools used among state housing agencies, there are no obvious recommendations for new policy or program changes. The Predictive Cost Model used by Minnesota Housing has demonstrated some success in containing costs in comparison with RSMeans data on industry costs. It is probably the most detailed tool used by state housing agencies for cost estimating and has generated interest from other agencies wishing to fine tune their cost containment strategies.

Minnesota Housing has also changed the process for awarding cost containment points for the current round of housing tax credits. The Agency awards 4 selection points to 50% of tax credit

applicants with the lowest TDC per-unit within four project types (Metro/new construction, Metro/rehabilitation, Greater Minnesota/new construction, Greater Minnesota/rehabilitation).

One area that could use some additional scrutiny is the increases in costs between initial application and loan closing. The 4% average increase suggests that applicants could be more precise in their proposed costs on the initial application.

Appendix A: Extended Literature Review

Following are brief overviews of the relevant literature in chronological order:

1992: *The Cost of Affordable Housing: An Analysis of Development Cost*. Authored by Watts, A. and Rockwood, F.

This report compared the development costs of new construction projects built with state or federal assistance against those produced without assistance in California. It found that “assisted” project development costs were about 15% more expensive than “unassisted” when compared on a per-unit basis. If comparisons are made per bedroom, “assisted” projects were about 20% less expensive. If the “unassisted” projects had been built to the same unit and bedroom specifications as the “assisted” projects, the “assisted” projects would be about 10% more expensive. These analyses excluded acquisition costs, developers’ fees, and projects located in urban centers. The sample size of 11 properties is too small for statistical significance. The driver of the cost differential was determined to be financing inefficiencies for “assisted” projects.

1993: *The California Affordable Housing Cost Study: Comparison of Market-rate and Affordable Rental Projects*. Authored by Bay Area Economics and ARCH.Research.

This report used 14 matched pairs of affordable and market-rate multifamily developments to measure differences in production costs in California. It found that comparisons by sq. ft. cost or per-unit cost are misleading due to average unit sizes of the development types. Once comparisons were made using the measurement of number of persons housed per-unit, affordable housing costs were similar to market-rate projects. This finding was important because the result showed that even though affordable housing projects have many costs which market-rate projects do not, they can compete on price per person housed. This analysis did not include land costs or development fees because these costs are assumed very differently across project type. The sample size is too small for statistical significance.

1993: *The California Affordable Housing Cost Task Force: Policy Report*. Authored by Local Initiatives Support Corporation.

This report is a companion piece to the above study from 1993. It reviews the main findings of the study and puts forth recommendations. These include 1) rewarding “assisted” projects if they meet cost benchmarks, 2) standardizing and coordinating the affordable housing finance system, and 3) creating positive financial incentives for local governments to streamline development approval processes.

1997: *Affordable Housing Cost Study: An Analysis of Housing Development Costs in Portland, Oregon*. Authored by White, W., Bole, R., and Sheehan, B.

This report analyzed the costs of about 70 new construction projects in Portland, Oregon. It looked at both single and multifamily development costs. For the multifamily side, it looked at 25 projects including 7 mixed-use developments. It found that projects undertaken by for-profit developers were less expensive than those developed by community development corporations (CDC) in all but one comparison, regardless of whether they were measured by per-unit, per sq. ft., or per person housed. It was also found that this was true even when they were “affordable.” The one category where CDC projects were less expensive was per person housed in affordable units. Yet, it was also recognized that for-profit projects were usually of different characteristics which had lower average costs; such as smaller units and bedrooms and lower acquisition costs. For-profit developers also tended to have lower fees built into the financing as they would often plan to realize their profits in the long term as the operator of the property. This sample size of this report is too small for statistical significance.

2009: *Affordable Housing Cost Study*. Authored by Graham, W., Vatske, L., Salmi, S., and Shannon, K.

This report analyzed development costs of projects receiving financing from the Washington State Housing Trust Fund. It used data from 65 projects, both new construction and rehabilitation, to measure impacts of project characteristics and recommend possible cost reductions. It also presented a case study comparison of an affordable and a market-rate

development. It found that construction costs averaged 62% of TDC, acquisition costs averaged 15%, project management costs averaged 14%, and costs associated with financing, permitting, impact fees, and reserve requirements averaged 9%. The conclusion drawn from the initial analysis was that there are many factors which contribute to the costs of projects developed with the fund. Therefore, differing project characteristics need to be taken into consideration when analyzing proposed project costs. The case study found that project costs were very similar between affordable and market-rate developments. The main difference was the higher soft costs in financing and project management for affordable projects. The central recommendation of the report was to increase emphasis on cost control as a future funding factor for the fund.

2011: *NCSHA Recommended Practices in Housing Credit Allocation and Underwriting*. Authored by the National Council of State Housing Agencies.

This document outlines the council's recommendation for setting per-unit cost limits for the development of affordable housing. It suggests that total development cost limits be set based upon local construction and land costs and geographical variation in costs within states. Projects which exceed these limits should warrant additional review. These should only be awarded funding if there exist "justifiable and reasonable" costs which would increase the TDC above the cost limit. It also suggests that its member agencies compare the costs of projects awarded funding with non-luxury market rate units and previous rounds of funding to ensure that costs remain reasonable.

2012: *Cost-Containment Policies, Practices and Recommendations from Seven State Housing Trust Fund Programs*. Authored by Hanson, S., and Hardcastle, A.

This report reviews the cost containment efforts of 7 states in regards to their Housing Trust Funds. It summarizes the findings and makes recommendations ways for Washington State's Housing Trust Fund to better achieve "cost effectiveness." It found that though each state had policies and programs in place to achieve cost containment, none of them had systematically evaluated their efforts to be able to prove that their actions had resulted in specific savings.

2012: *NCSHA Cost Containment Survey Summary*. Authored by the National Council of State Housing Agencies.

This report sums up the findings from a survey distributed to the council's members. It asked a variety of questions regarding state housing agencies' efforts to achieve cost containment in its affordable housing project developments. Thirty-six states responded to the survey representing a variety of policy practices used. The factors which were thought to be driving cost increases were related to secondary requirements imposed upon affordable housing developments, such as municipal regulatory, investor reserve, green, geographical diversity, and supportive housing requirements. Efforts to contain costs have included analysis of cost trends, revision of scoring schema to incentivize cost containment, total development cost caps, and project application ranking by cost.

2013: *Comparing the Costs of New Construction and Acquisition-Rehab in Affordable Multifamily Rental Housing: Applying a New Methodology for Estimating Lifecycle Costs*. Authored by Brennan, M., Deora, A., Heegaard, A., Lee A., Lubell, J., and Wilkins, C.

This report uses a convenience sample of 269 multifamily affordable housing projects from across the U.S. developed between 1999 and 2010 to analyze costs differences between new construction and rehabilitation projects. It presents a new method of measuring lifecycle costs over a period of 50 years in order to equalize the comparison of TDC between multifamily projects. This adjustment is meant to account for any possible infusions of funds needs later on to avoid a negative balance in a property's reserve funds. The analysis attempted to control for factors which would change cost structure; such as location, unit and project sizes, and building type. It found that after the adjustment was made new construction projects averaged \$56,033 higher in costs per-unit than acquisition and rehabilitation projects. The authors believe that this type of analysis is important to do accurate comparisons of multifamily development costs.

Appendix B:

The following two tables provide detailed cost estimates for the refined analysis. All project classifications include acquisition. The first table displays the cost averages and shares of TDC for the different project types by year clusters. The second table displays the dollar and percent changes between periods. The missing costs category was dropped from the tables because there were none recorded. The syndication fees column used only the non-zero values to estimate averages.

2003-2005		Sample size	TDC/UNIT	ACQ COSTS \$ % of TDC	CONSTRUCT COSTS \$ % of TDC	DEVELOPER FEE \$ % of TDC	FIN COSTS \$ % of TDC	PRO FEES \$ % of TDC	NON ZERO SYN FEES \$ % of TDC	NON-MORT COSTS \$ % of TDC
NC	HTC METRO	30	\$233,136	\$17,995 7.72%	\$161,251 69.17%	\$19,487 8.36%	\$10,382 4.45%	\$17,065 7.32%	\$1,423 0.61%	\$5,733 2.45%
NC	NON LIHTC METRO	8	\$208,039	\$26,842 12.90%	\$145,514 69.95%	\$9,819 4.72%	\$6,628 3.19%	\$16,415 7.89%		\$2,822 1.36%
NC	HTC GR. MN	19	\$155,977	\$9,273 5.95%	\$113,187 72.57%	\$16,730 10.73%	\$5,536 3.55%	\$9,351 6.00%	\$683 0.44%	\$1,324 0.85%
NC	NON LIHTC GR. MN	8	\$157,430	\$7,876 5.00%	\$130,022 82.59%	\$5,486 3.49%	\$2,216 1.41%	\$11,047 7.02%		\$774 0.49%
REHAB	HTC METRO	8	\$196,033	\$56,697 28.92%	\$92,987 47.43%	\$17,207 8.78%	\$9,022 4.60%	\$13,227 6.75%	\$1,915 0.98%	\$5,458 2.78%
REHAB	NON LIHTC METRO	8	\$132,480	\$73,702 55.63%	\$45,418 34.28%	\$6,812 5.14%	\$2,152 1.62%	\$3,320 2.51%		\$1,077 0.81%
REHAB	HTC GR. MN	8	\$152,654	\$28,196 18.47%	\$90,079 59.01%	\$14,211 9.31%	\$6,210 4.07%	\$9,685 6.34%		\$3,646 2.39%
REHAB	NON LIHTC GR. MN	3	\$73,411	\$29,314 39.93%	\$31,648 43.11%	\$3,920 5.34%	\$4,560 6.21%	\$3,730 5.08%		\$239 0.32%

2006-2009		Sample size	TDC/UNIT	ACQ COSTS \$ % of TDC	CONSTRUCT COSTS \$ % of TDC	DEVELOPER FEE \$ % of TDC	FIN COSTS \$ % of TDC	PRO FEES \$ % of TDC	NON ZERO SYN FEES \$ % of TDC	NON-MORT COSTS \$ % of TDC
NC	HTC METRO	31	\$242,804	\$21,286 8.77%	\$160,945 66.29%	\$23,584 9.71%	\$10,682 4.40%	\$19,710 8.12%	\$807 0.33%	\$6,051 2.49%
NC	NON LIHTC METRO	6	\$185,287	\$15,378 8.30%	\$134,456 72.57%	\$10,203 5.51%	\$1,358 0.73%	\$20,203 10.90%		\$3,688 1.99%
NC	HTC GR. MN	17	\$207,695	\$8,671 4.17%	\$147,065 70.81%	\$22,089 10.64%	\$6,217 3.96%	\$14,151 6.81%	\$797 0.38%	\$6,940 3.34%
NC	NON LIHTC GR. MN	8	\$183,626	\$17,138 9.33%	\$131,588 71.67%	\$16,283 8.87%	\$1,635 0.89%	\$14,582 7.94%		\$2,379 1.30%
REHAB	HTC METRO	15	\$205,879	\$75,110 36.48%	\$78,129 37.95%	\$22,443 10.90%	\$12,664 6.15%	\$10,554 5.13%	\$1,427 0.69%	\$6,124 2.97%
REHAB	NON LIHTC METRO	16	\$126,939	\$59,343 46.75%	\$45,897 36.16%	\$9,225 7.27%	\$3,355 2.64%	\$7,522 5.93%		\$1,597 1.26%
REHAB	HTC GR. MN	12	\$174,857	\$42,208 24.14%	\$90,970 52.03%	\$17,107 9.78%	\$6,571 3.76%	\$11,559 6.61%	\$688 0.38%	\$5,775 3.30%
REHAB	NON LIHTC GR. MN	9	\$115,613	\$32,486 28.10%	\$66,940 57.90%	\$5,570 4.82%	\$3,184 2.75%	\$6,756 5.84%		\$678 0.59%

2010-2012		Sample size	TDC/UNIT	ACQ COSTS \$ % of TDC	CONSTRUCT COSTS \$ % of TDC	DEVELOPER FEE \$ % of TDC	FIN COSTS \$ % of TDC	PRO FEES \$ % of TDC	NON ZERO SYN FEES \$ % of TDC	NON-MORT COSTS \$ % of TDC
NC	HTC METRO	9	\$232,286	\$20,920 9.01%	\$150,177 64.65%	\$21,574 9.29%	\$12,051 5.19%	\$16,634 7.16%	\$608 0.26%	\$10,389 4.47%
NC	NON LIHTC METRO	4	\$218,780	\$23,843 10.90%	\$161,235 73.70%	\$14,125 6.46%	\$3,311 1.51%	\$13,793 6.30%		\$2,473 1.13%
NC	HTC GR. MN	9	\$210,007	\$9,514 4.53%	\$146,225 69.63%	\$21,483 10.23%	\$8,179 4.37%	\$17,425 8.30%	\$1,312 0.62%	\$5,013 2.39%
NC	NON LIHTC GR. MN	9	\$206,563	\$9,470 4.58%	\$156,355 76.66%	\$16,185 7.84%	\$2,229 1.08%	\$16,956 8.21%		\$3,369 1.63%
REHAB	HTC METRO	14	\$189,095	\$54,119 28.62%	\$90,541 47.88%	\$17,547 9.28%	\$9,204 4.87%	\$10,848 5.74%	\$703 0.37%	\$6,233 3.30%
REHAB	NON LIHTC METRO	15	\$116,061	\$33,188 28.60%	\$61,601 53.08%	\$9,574 8.25%	\$2,200 1.90%	\$6,962 6.00%		\$2,536 2.19%
REHAB	HTC GR. MN	9	\$120,875	\$51,915 42.95%	\$43,041 35.61%	\$12,578 10.41%	\$5,460 4.52%	\$5,860 4.85%	\$377 0.31%	\$1,770 1.46%
REHAB	NON LIHTC GR. MN	9	\$133,856	\$46,118 34.45%	\$59,780 44.66%	\$11,080 8.28%	\$5,582 4.17%	\$10,101 7.55%		\$1,166 0.89%

2003-05 to 2006-09			TDC/UNIT			ACQ COSTS			CONSTRUCT COSTS			DEVELOPER FEE			FIN COSTS			PRO FEES			NON ZERO SYN FEES			NON-MORT COSTS		
NC	HTC	METRO	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%
NC	HTC	METRO	\$9,668	4.15%	\$3,290	18.28%	(\$306)	-0.19%	\$4,097	21.02%	\$300	2.88%	\$2,645	15.50%	(\$615)	-43.25%	\$328	5.73%							\$328	5.73%
NC	NON LIHTC	METRO	(\$22,752)	-10.94%	(\$1,464)	-42.71%	(\$11,057)	-7.60%	\$384	3.91%	(\$5,270)	-79.51%	\$3,788	23.07%			\$866	30.70%							\$866	30.70%
NC	HTC	GR. MN	\$51,718	33.16%	(\$602)	-6.49%	\$33,878	29.93%	\$5,359	32.03%	\$2,681	48.43%	\$4,799	51.32%	\$114	16.69%	\$5,616	424.17%							\$5,616	424.17%
NC	NON LIHTC	GR. MN	\$26,196	16.64%	\$9,262	117.61%	\$1,576	1.21%	\$10,797	196.46%	(\$561)	-26.22%	\$3,536	32.01%			\$1,605	207.46%							\$1,605	207.46%
REHAB	HTC	METRO	\$9,845	5.02%	\$18,413	32.48%	(\$14,859)	-15.98%	\$5,235	30.42%	\$3,642	40.37%	(\$2,672)	-20.20%	(\$486)	-25.47%	\$666	12.20%							\$666	12.20%
REHAB	NON LIHTC	METRO	(\$5,541)	-4.18%	(\$14,359)	-19.46%	\$479	1.06%	\$2,413	35.42%	\$1,203	55.91%	\$4,202	126.57%			\$520	48.33%							\$520	48.33%
REHAB	HTC	GR. MN	\$22,203	14.54%	\$14,012	49.69%	\$890	0.99%	\$2,895	20.37%	\$361	5.81%	\$1,874	19.35%	(\$167)	-19.95%	\$2,129	58.38%							\$2,129	58.38%
REHAB	NON LIHTC	GR. MN	\$42,202	57.49%	\$3,171	10.82%	\$35,292	111.51%	\$1,650	42.08%	(\$1,376)	-30.17%	\$3,025	81.10%			\$439	184.16%							\$439	184.16%

2006-09 to 2010-12			TDC/UNIT			ACQ COSTS			CONSTRUCT COSTS			DEVELOPER FEE			FIN COSTS			PRO FEES			NON ZERO SYN FEES			NON-MORT COSTS		
NC	HTC	METRO	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%
NC	HTC	METRO	(\$10,518)	-10.94%	(\$365)	-1.72%	(\$10,767)	-6.69%	(\$2,010)	-8.52%	\$1,369	12.81%	(\$3,076)	-15.61%	(\$200)	-24.71%	\$4,338	71.68%							\$4,338	71.68%
NC	NON LIHTC	METRO	\$33,493	18.08%	\$8,465	55.04%	\$26,779	19.92%	\$3,922	38.44%	\$1,953	143.84%	(\$6,409)	-31.73%			(\$1,216)	-32.96%							(\$1,216)	-32.96%
NC	HTC	GR. MN	\$2,312	1.11%	\$843	9.73%	(\$840)	-0.57%	(\$606)	-2.74%	\$963	11.72%	\$3,275	23.14%	\$514	64.48%	(\$1,927)	-27.76%							(\$1,927)	-27.76%
NC	NON LIHTC	GR. MN	\$22,938	12.49%	(\$7,668)	-44.74%	\$26,757	20.33%	(\$108)	-0.66%	\$594	36.32%	\$2,374	16.28%			\$990	41.62%							\$990	41.62%
REHAB	HTC	METRO	(\$16,784)	-8.15%	(\$20,990)	-27.95%	\$12,413	15.89%	(\$4,895)	-21.81%	(\$3,460)	-27.32%	\$294	2.79%	(\$724)	-50.76%	\$109	1.78%							\$109	1.78%
REHAB	NON LIHTC	METRO	(\$10,878)	-8.57%	(\$26,154)	-44.07%	\$15,703	34.21%	\$349	3.78%	(\$1,155)	-34.42%	(\$560)	-7.45%			\$939	58.79%							\$939	58.79%
REHAB	HTC	GR. MN	(\$53,981)	-30.87%	\$9,707	23.00%	(\$47,929)	-52.69%	(\$4,528)	-26.47%	(\$1,111)	-16.91%	(\$5,699)	-49.30%	(\$292)	-43.64%	(\$4,004)	-69.34%							(\$4,004)	-69.34%
REHAB	NON LIHTC	GR. MN	\$18,243	15.78%	\$13,632	41.98%	(\$7,160)	-10.70%	\$5,520	99.11%	\$2,398	75.30%	\$3,346	49.52%			\$508	74.92%							\$508	74.92%

2003-05 to 2010-12			TDC/UNIT			ACQ COSTS			CONSTRUCT COSTS			DEVELOPER FEE			FIN COSTS			PRO FEES			NON ZERO SYN FEES			NON-MORT COSTS		
NC	HTC	METRO	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%	A\$	Δ%
NC	HTC	METRO	(\$850)	-0.36%	\$2,925	16.25%	(\$11,073)	-6.87%	\$2,087	10.71%	\$1,668	16.07%	(\$431)	-2.52%	(\$815)	-57.28%	\$4,666	81.52%							\$4,666	81.52%
NC	NON LIHTC	METRO	\$10,741	5.16%	(\$2,999)	-11.17%	\$15,722	10.80%	\$4,306	43.85%	(\$3,316)	-50.04%	(\$2,622)	-15.97%			(\$349)	-12.38%							(\$349)	-12.38%
NC	HTC	GR. MN	\$54,030	34.64%	\$241	2.60%	\$33,038	29.19%	\$4,753	28.41%	\$3,644	65.82%	\$8,074	86.34%	\$628	91.94%	\$3,689	278.66%							\$3,689	278.66%
NC	NON LIHTC	GR. MN	\$49,133	31.21%	\$1,594	20.24%	\$28,333	21.79%	\$10,689	194.49%	\$13	0.57%	\$5,910	53.50%			\$2,595	335.43%							\$2,595	335.43%
REHAB	HTC	METRO	(\$6,938)	-3.54%	(\$2,577)	-4.55%	(\$2,446)	-2.63%	\$340	1.97%	\$182	2.02%	(\$2,378)	-17.98%	(\$1,212)	-63.30%	\$775	14.20%							\$775	14.20%
REHAB	NON LIHTC	METRO	(\$16,419)	-12.39%	(\$40,513)	-54.97%	\$16,182	35.63%	\$2,762	40.54%	\$48	2.24%	\$3,642	109.70%			\$1,460	135.54%							\$1,460	135.54%
REHAB	HTC	GR. MN	(\$31,779)	-20.82%	\$23,719	84.12%	(\$47,038)	-52.22%	(\$1,633)	-11.49%	(\$750)	-12.06%	(\$3,825)	-39.50%	(\$456)	-54.88%	(\$1,876)	-51.45%							(\$1,876)	-51.45%
REHAB	NON LIHTC	GR. MN	\$60,445	82.34%	\$16,804	57.32%	\$28,132	88.89%	\$7,170	182.89%	\$1,022	22.42%	\$6,371	170.78%			\$947	397.06%							\$947	397.06%

¹ Joint Center for Housing Studies of Harvard University. (2013). *The State of the Nation's Housing 2013*. Retrieved from <http://www.jchs.harvard.edu/research/publications/state-nations-housing-2013>.

² Minnesota Housing Finance Agency. (2013). *2013 Minnesota Housing Affordable Housing Plan: Executive Summary*. P. 1. Retrieved from <http://www.mnhousing.gov/wcs/Satellite?c=Page&cid=1364481794656&pagename=External%2FPage%2FEXTStandardLayout>.

³ Minnesota Housing Finance Agency. (2013). *Revised Cost Containment Methodology*.

⁴ Construction costs include the categories of new construction costs, rehabilitation costs, and environmental costs. Soft costs include the categories of developer fees, financing costs, professional fees, syndication fees, non-mortgageable costs, and missing costs.

⁵ Minnesota Housing Finance Agency. (2013). *Revised Cost Containment Methodology*.